REMARKS

Claims 1-3 and 5-9 are currently pending in the application.

Claims 1 and 5 have been amended solely to expedite patent prosecution in accordance with the U.S. Patent Office Business Goals (65 Fed. Reg. 54604 (September 8, 2000)). Claim 2 has been amended for clarity. Applicant reserves the right to present any cancelled subject matter in a co-pending application.

As amended, claim 1 recites:

- "screening for a proteomic interaction between at least one protein and a plurality of proteins, where the screening is performed in the absence of a simulated redox state perturbation" (see, *inter alia*, the abstract; page 1, line 5; page 1 lines 15-18; page 7, lines 9-21; page 9, lines 16-17; page 9, lines 21-22 to page 10 lines 1-3; page 14, lines 9-12; page 19, lines 10-18; page 20, lines 14-18; and Examples I-IV of the originally filed application);
- "screening for a proteomic interaction between the at least one protein and a plurality of proteins, where the screening is performed in the presence of a simulated redox perturbation" (see, *inter alia*, the abstract; page 1, line 5; page 1, lines 15-18; page 7, lines 9-21; page 9, lines 16-17; page 9, lines 21-22 to page 10 lines 1-3; page 14, lines 9-12; page 19, lines 10-18; page 20, lines 14-18; and Examples I-IV of the originally filed application);
- "generating the proteomic map by identifying at least one different proteomic interaction between (a) and (b)" (see, *inter alia*, the abstract; page 1, line 5; page 1, lines 15-18; page 2, lines 5-20; page 20, lines 14-18; and Examples I-IV of the originally filed application).

As amended, claim 5 recites:

- "screening for a proteomic interaction between at least one protein and a plurality of proteins, where the screening is performed in room air" (see, *inter alia*, the abstract; page 1, line 5; page 1, lines 15-18; page 7, lines 9-21; page 9, lines 16-17; page 9, lines 21-22 to page 10 lines 1-3; page 14, lines 9-12; page 19, lines 10-18; page 20, lines 14-18; and Examples I-IV of the originally filed application);
- "screening for a proteomic interaction between the at least one protein and a plurality of proteins, where the screening is performed in the presence of decreased oxygen tension"(see, *inter alia*, the abstract; page 1, line 5; page 1, lines 15-18; page 7, lines 9-21; page 9, lines 16-17; page 9, lines 21-22 to

page 10 lines 1-3; page 14, lines 9-12; page 19, lines 10-18; page 20, lines 14-18; and Examples I-IV of the originally filed application); and

- "correlating the proteomic interaction(s) with oxygen tension by identifying at least one different proteomic interaction between (a) and (b)" (see, *inter alia*, the abstract; page 1, line 5; page 1, lines 15-18; page 17, lines 2-18; page 19, lines 10-18; and Examples I-IV of the originally filed application).

Claim 2 has been amended to delete "pathophysiological process."

These amendments are supported by the application as originally filed, and do not constitute new matter. Specific support for the amendments is shown in parentheses, above. Entry of these amendments in the application is respectfully requested.

Previous Rejections

The Examiner has withdrawn all previous rejections from the Office Action mailed November 18, 2003 (Office Action, page 2).

35 U.S.C. §102(b)

Claims 1 and 2 have been rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Abate et al., 1990, *Science* 249:1157-1161 ("Abate"; Office Action, page 3). Claims 5, 6, and 9 have been rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Goldberg et al., 1988, *Science* 242:1412-1415 ("Goldberg"; Office Action, page 3). Claims 1-3 have been rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Saitoh et al., *EMBO J.*17:2596-2606 ("Saitoh"; Office Action, page 4). Claims 1-3 have also been rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Nishiyama et al., 1999, *J. Biol. Chem.* 274:21654-21650 ("Nishiyama"; Office Action, page 4). Applicant respectfully traverses this rejection.

As currently amended, claims 1 and 5 read:

1. A method of establishing a proteomic interaction map comprising
(a) screening for a proteomic interaction between *at least one protein and a plurality of proteins*, where the screening is performed in the absence of a simulated redox state perturbation;

(b) screening for a proteomic interaction between the *at least one protein and a plurality of proteins*, where the screening is performed in the presence of a simulated redox perturbation; and
(c) generating the proteomic map by identifying at least one different proteomic interaction between (a) and (b).

5. A method of correlating proteomic interaction(s) with oxygen tension comprising
(a) screening for a proteomic interaction between *at least one protein and a plurality of proteins*, where the screening is performed in room air;
(b) screening for a proteomic interaction between the *at least one protein and a plurality of proteins*, where the screening is performed in the presence of decreased oxygen tension; and
(c) correlating the proteomic interaction(s) with oxygen tension by identifying at least one different proteomic interaction between (a) and (b).

None of the cited references teach or suggest the presently claimed method, which includes screening for proteomic interactions between *at least one protein* and *a plurality of proteins* under the recited conditions. Goldberg reports on the expression levels of EPO (see, e.g., Figure 3). Abate reports on the binding of Fos and Jun (see, e.g., page 1158, bottom left column to top center column, and Figure 2). Saitoh reports on the binding of TRX and ASK1 (see, e.g., page 2599 right column and Figure 6). Nishiyama reports on the binding of TRX and TBP-2 (also called VDUP1) (see, e.g., page 21646, right column and Figure 3). Thus, the cited references fail to teach or suggest Applicant's methods which include *at least one protein* and *a plurality of proteins*.

Anticipation under 35 U.S.C. §102 requires that the cited reference teach every aspect of the claimed invention. *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987); MPEP §706.02 IV. Thus, "[t]he identical invention must be shown in as complete detail as contained in the...claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989); MPEP §2131. Here, the claimed methods include screening *at least one protein* and *a plurality of proteins*, which is not taught or suggested by the cited references. Therefore, the cited references cannot anticipate the subject matter of independent claims 1 or 5, or dependent claims 2-3 or 6-9 as presented herein. Withdrawal of this rejection is respectfully requested.

35 U.S.C. §102(a)

Claims 1-3 and 5-9 have been rejected under 35 U.S.C. §102(a) as allegedly being anticipated by Ratcliffe WO 00/69908 ("Ratcliffe"; Office Action, page 5). Applicant respectfully traverses.

Amended claim 1 includes the aspects of screening for a proteomic interaction in the a) presence; and b) absence of a simulated redox perturbation and generating a proteomic map by identifying at least one *different proteomic interaction* between (a) and (b).

Amended claim 5 includes the aspects of screening for a proteomic interaction in: a) room air; and b) decreased oxygen tension and correlating proteomic interaction(s) with oxygen tension by identifying at least one *different proteomic interaction* between (a) and (b).

Ratcliffe does not teach or suggest at least these aspects of the claimed invention.

Ratcliffe reports assays for testing VHL and HIF-alpha interactions (see, e.g., page 3, lines 6-7). However, Ratcliffe reports that VHL and HIF-alpha interact with each other under both hypoxic *and* so-called "normoxic" conditions (see, e.g., page 13, lines 31-32 to page 14, lines 1-3; page 30, lines 12-20; and page 33, lines 15-21).

Ratcliffe does not teach or suggest assays for identifying differences in VHL/HIF-alpha *interactions* based on the differences of hypoxic and normoxic conditions. Nor does Ratcliffe teach or suggest assays for correlating VHL/HIF-alpha *interactions* based on differences in oxygen tension. Instead, Ratcliffe utilizes hypoxic conditions as controls for HIF-alpha *stability* (see, e.g., page 33, lines 27-32).

Although Ratcliffe recommends inhibition of VHL and HIF-alpha interactions, the authors do not teach that such inhibition depends on incubation in either a hypoxic environment or a normoxic environment. The hypoxic conditions in Ratcliffe are employed only as *stability* controls for HIF-alpha (see, e.g., page 12, lines 24-25; page 33, lines 27-32).

Ratcliffe's assays do nothing to identify differences in VHL interaction with HIF-alpha based on hypoxic and normoxic environments. As such, Ratcliffe's methods cannot be said to generate a map based on differences in VHL/HIF-alpha interactions observed in hypoxic/normoxic conditions, or to correlate VHL/HIF-alpha interactions with oxygen tension.

Applicant again notes that a cited reference must teach every aspect of the claimed invention to anticipate under 35 U.S.C. §102. *Verdegaal Bros.* at 631; MPEP §706.02 IV. Here, the claimed methods include generating a proteomic map by identifying different proteomic interactions in the presence and absence of a simulated redox perturbation, and correlating proteomic interaction(s) with oxygen tension.

These aspects, at least, are not taught or suggested by Ratcliffe. As such, Ratcliffe cannot anticipate the subject matter of independent claims 1 or 5, or dependent claims 2-3 or 6-9 as presented herein. Withdrawal of this rejection is respectfully requested.

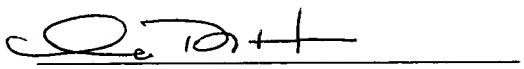
CONCLUSION

Applicant believes that the claims as amended are patentable and a prompt allowance is respectfully requested. If further discussion of this case is deemed helpful, the Examiner is encouraged to contact the undersigned at the telephone number provided below, and is assured of full cooperation in progressing the instant claims to allowance.

Applicant believes no further fee is due at this time; however, the Commissioner is authorized to charge any additional fees that may be due, or to credit any overpayment, to the undersigned's account, Deposit Account No. 50-0311, Reference Number: 24862-503 (Customer Number: 35437).

Date: January 13, 2005

Respectfully submitted,



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